

# SILICON NPN TRANSISTOR EPITAXIAL PLANAR TYPE (PCT PROCESS)

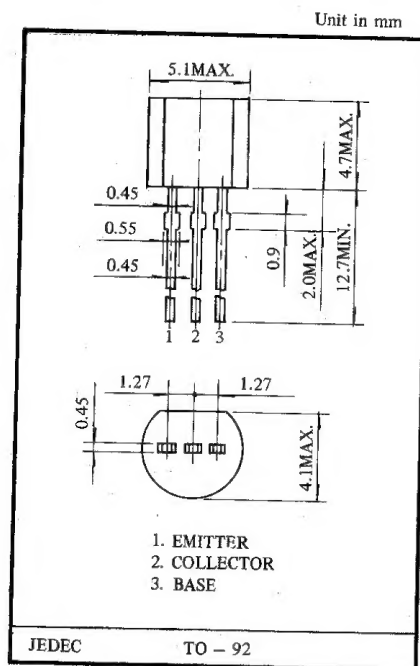
# 2SC3203

## APPLICATIONS

- Low Frequency Power Amplifiers  
(B-Class Push-pull,  $P_o=1W$ )
- General Purpose Switching Circuits

## FEATURES

- Excellent  $h_{FE}$  vs. Collector Current Characteristics
- $P_c=600mW$ ,  $I_c=800mA$  max.
- $V_{CE(sat)}=0.5V$  max at  $I_c=500mA$ ,  $I_B=20mA$
- Complementary to the 2SA1271



## ■ MAXIMUM RATINGS ( $T_a=25^\circ C$ )

| CHARACTERISTIC              | SYMBOL    | RATING | UNIT |
|-----------------------------|-----------|--------|------|
| Collector - Base Voltage    | $V_{CBO}$ | 35     | V    |
| Collector - Emitter Voltage | $V_{CEO}$ | 30     | V    |
| Emitter - Base Voltage      | $V_{EBO}$ | 5      | V    |
| Collector Current           | $I_c$     | 800    | mA   |

| CHARACTERISTIC              | SYMBOL    | RATING  | UNIT       |
|-----------------------------|-----------|---------|------------|
| Emitter Current             | $I_E$     | -800    | mA         |
| Collector Power Dissipation | $P_c$     | 600     | mW         |
| Junction Temperature        | $T_j$     | 150     | $^\circ C$ |
| Storage Temperature Range   | $T_{stg}$ | -55~150 | $^\circ C$ |

## ■ ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

| CHARACTERISTIC                         | SYMBOL        | TEST CONDITION            | MIN. | TYP. | MAX. | UNIT |
|--|---------------|---------------------------|------|------|------|------|
| Collector Cut off Current              | $I_{CBO}$     | $V_{CB}=35V$ , $I_E=0$    | -    | -    | 100  | nA   |
| Emitter Cut off Current                | $I_{EBO}$     | $V_{EB}=5V$ , $I_c=0$     | -    | -    | 100  | nA   |
| Collector - Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_c=10mA$                | 30   | -    | -    | V    |
| DC Current Gain                        | $h_{FE(1)}$   | $V_{CE}=1V$ , $I_c=100mA$ | 100  | -    | 320  |      |
|  | $h_{FE(2)}$   | $V_{CE}=1V$ , $I_c=700mA$ | 35   | -    | -    |      |
| Collector - Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_c=500mA$ , $I_B=20mA$  | -    | -    | 0.5  | V    |
| Base - Emitter Voltage                 | $V_{BE}$      | $V_{CE}=1V$ , $I_c=10mA$  | 0.5  | -    | 0.8  | V    |
| Transition Frequency                   | $f_T$         | $V_{CE}=5V$ , $I_c=10mA$  | -    | 120  | -    | MHz  |
| Output Capacitance                     | $C_{ob}$      | $V_{CB}=10V$ , $f=1MHz$   | -    | 13   | -    | pF   |

**NOTE: According to  $h_{FE}$  (1), Classified as follows**

|   |           |   |           |
|---|-----------|---|-----------|
| 0 | 100 - 200 | Y | 160 - 320 |
|---|-----------|---|-----------|